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| 09/917,839 | 07/31/2001 | Hiroya Fukuyama | P 282739 SPO-2467 | 1707 |
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| PILLSBURY WINTHROP, LLP | | | FINEMAN, LEE A | |
| P.O. BOX 10500 | | | ART UNIT | |
| MCLEAN, VA 22102 | | | PAPER NUMBER | |
| | | | 2872 | |

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|----------------------------------|--|
| Office Action Summary | Application No. 09/917,839 | Applicant(s) FUKUYAMA, HIROYA | |
| | Examiner Lee Fineman | Art Unit 2872 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to an amendment filed 26 October 2005 in which claims 1, 9 and 18 were amended. Claims 1-19 are pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 5-6, 8-10, 13, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al., U.S. Patent No. 5,889,617 in view of Meehan et al., U.S. Patent No. 6,556,364 B2.

Regarding claims 1, 6, 9, 15 and 18, Yamada et al. disclose in figs. 1 and 17 an objective unit (fig. 17) to be mounted on a revolver (106) of an optical apparatus (fig. 1) for observation, the revolver facilitating switching among a plurality of objective units, the objective unit comprising an objective lens (G3); an objective frame (10) that holds the objective lens; an outer frame member (barrel 12) with a hollow cylindrical shape (see figs. 1, 2 and 17) that, as a sheath of the objective unit, houses the objective frame therein (fig. 17), the outer frame member having a connecting portion (not shown in fig. 17, see barrel 105 figs. 1 and 2) to be integrally connected with the revolver (fig. 1); and objective holder (11) that is provided inside the outer frame member (fig. 17) and holds the objective frame in such a manner that the objective frame is movable in a direction of an optical axis of the objective lens (column 16, lines 59-60) which

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is relative movement between the objective frame and the outer frame member in the direction of an optical axis of the objective lens to thereby move the objective lens in the direction of the optical axis while the objective unit and the revolver being integrally connected with one another; a plane-parallel transparent lens (L11) arranged before or at a top of the objective lens (fig. 17); and filling a space between the transparent member and a specimen (27, see fig. 3) with a transparent liquid medium (24) to observe the specimen. Yamada et al. disclose the claimed invention except for at least one actuator that causes the relative movement to drive the objective lens. Meehan et al. teaches an optical apparatus (fig. 1) with a lens unit (figs. 2 and 3) in which an actuator (330) causes relative movement between the lens frame (215) and an outer frame (230) in the direction of an optical axis of the objective lens. It would have been obvious to one of ordinary skill in the art at the time the invention was made to add an actuator to the system of Yamada et al. as suggested by Meehan et al. to provide more consistent, even control of the movement.

Regarding claims 2 and 10, Yamada et al. in view of Meehan et al. disclose the claimed invention as set forth above except for the ratio of light intensity at a center of illumination (I_{on}) to light intensity (I_{off}) at a position from the center of said illumination light. Simply stated, I_{off} is the brightness at the edge of the field and off-axis brightness is a common concern to those of ordinary skill in the art. Further, the provision of optical systems having a ratio of I_{on} / I_{off} having at least the claimed ratio are well known in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made for Yamada et al. view of Meehan et al. to have at least the claimed ratio of I_{on} / I_{off} in order to provide an evenly illuminated field throughout the excursion of the objective lens. It is noted as directed by the MPEP 2144.03 that

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if the applicant does not seasonably traverse the well-known statement during examination, then the object of the well-known statement is taken to be admitted prior art. *In re Chevenard*, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). As such, the above well-known statement of the examiner are now held to be admitted prior art.

Regarding claims 8 and 17, Yamada et al. in view of Meehan et al. disclose the claimed invention except for the duplication of units including an objective lens, an objective holder and an actuator. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a duplication of units, since it has been held that a mere duplication of working parts of a device involves only routine skill in the art. One would have been motivated to duplicate the units for the purpose of providing more flexibility in the system with different viewing options. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)

Regarding claims 5 and 13, Yamada et al. in view of Meehan et al. discloses the claimed invention except for the objective unit includes three sets of actuators so that a first actuator is placed to move said objective lens in a first direction, a second actuator is placed to move said objective lens in a second direction different from said first direction, a third actuator that is placed to move said objective lens in a third direction different from each of said first direction and said second direction. Meehan further teaches wherein the lens unit has a first actuator (in 240A, fig. 2A) is placed to move said lens in a first direction (perpendicular to the optical axis), a second actuator (in 240B, fig. 2A) is placed to move said lens in a second direction (parallel to the optical axis) different from said first direction and a third actuator (column 5, lines 45-48) that is placed to move said objective lens in a third direction different from each of said first direction and said second direction. It would have been obvious to one of ordinary skill in the art

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at the time the invention was made to replace the objective holder of Yamada et al. with that of Meehan et al. to provide many degrees of freedom for proper objective lens alignment (Meehan, column 4, lines 57-59).

3. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. in view of Meehan et al. as applied to claim 10 above and in further view of Davidovits et al., U.S. Patent No. 3,643,015.

Yamada et al. in view of Meehan et al. as applied to claim 10 above discloses the claimed invention except for explicitly stating having an illumination and detection unit including a light source, a photodetector and a light splitting and combining member that introduces light from said light source into said objective lens and introduces signal light passing through said objective lens into said photodetector. Optical apparatus with illumination and detection units are very well known in art. For example, Davidovits et al. teaches a microscope system having an illumination and detection unit (fig. 3) including a light source (15), a photodetector (44) and a light splitting and combining member (40) that introduces light from said light source into said objective lens and introduces signal light passing through said objective lens into said photodetector. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include any well-known illumination and detection unit with a light source, a photodetector and a light splitting and combining member to the system of Yamada et al. in view of Meehan et al. to provide an effective method to examine a specimen.

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4. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. in view of Meehan et al. as applied to claim 18 above and in further view of Aizaki et al., Japanese Published Application JP2001091849 A.

Yamada et al. in view of Meehan et al. as applied to claim 18 above disclose the claimed invention except wherein a space between said transparent member and a specimen is filled with a transparent liquid medium to observe said specimen and wherein a space between said objective lens and said transparent member is filled with a different transparent liquid medium of substantially the same refractive index as a refractive index of said transparent liquid medium. Aizaki et al. teach an objective unit (fig. 1) with wherein a plane-parallel transparent member (181) is before or at a top (fig. 1) of said objective lens (2) and an observation method wherein a space between said transparent member and a specimen (20) is filled with a transparent liquid medium (22) to observe said specimen and wherein a space between said objective lens and said transparent member is filled with a different transparent liquid medium (19) of substantially the same refractive index as a refractive index of said transparent liquid medium. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a space between said objective lens and said transparent member in the system of Yamada et al. in view of Meehan et al. filled with a different transparent liquid medium of substantially the same refractive index as a refractive index of said transparent liquid medium as taught by Aizaki et al., to be able to observe specimens immersed in a liquid environment.

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5. Claims 7 and 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. in view of Meehan et al. and Davidovits et al., applied to claim 14 above and in further view of Hori et al., U.S. Patent No. 6,191,809 B1.

Yamada et al. in view of Meehan et al. and Davidovits et al., applied to claim 14 above discloses the claimed invention except for the optical apparatus having a beam diameter converting means (20) for producing a light beam that is incident on the objective lens and a plurality of objectives held by the objective holder and a plurality of photodetectors. Davidovits et al. further teaches the optical apparatus having a beam diameter converting means (20) for producing a light beam that is incident on the objective lens. It would have been obvious to one having ordinary skill in the art at the time the invention was made to add a beam diameter converting means to the system as suggested by Davidovits et al. to provide more flexible system by having more control over the size of beam. Further, Hori et al. teach a microscope (fig. 1) with a plurality of objectives (8R, 8L) held by an objective holding means (4) and a plurality of photodetectors (18R, 18L).). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a plurality of objectives held by the objective holder and a plurality of photodetectors in the system, as suggested by Hori et al., to provide differing views of the sample under examination.

6. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. in view of Meehan et al. as applied to claims 2 and 10 above and in further view of Makigaki, U.S. Patent No. 5,608,696.

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Yamada et al. in view of Meehan et al. as applied to claims 2 and 10 above disclose the claimed invention except for the objective unit further comprising an element which combines a light source with a photodetector and a relay optical system which introduces light from said element into said objective lens and at the same time, introduces again signal light from a specimen, passing through said objective lens, into said element. Makigaki teaches an optical apparatus (fig. 1) including an element (4) which combines a light source with a photodetector (column 3, lines 48-49) and a relay optical system (5) which introduces light from said element into said objective lens and at the same time, introduces again signal light from a specimen, passing through said objective lens, into said element (column 3, lines 42-49). It would have been obvious to one having ordinary skill in the art at the time the invention was made to add an element and relay system to the objective unit of Yamada et al. in view of Meehan et al. to make a very compact, portable system for imaging a sample.

7. Claims 4 and 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. in view of Meehan et al. and Davidovits et al., applied to claim 14 above and in further view of Makigaki.

Yamada et al. in view of Meehan et al. and Davidovits et al., applied to claim 14 above discloses the claimed invention except for the light source, photodetector and light splitting and combining member being within the objective unit. Makigaki teaches an optical apparatus (fig. 1) which is a compact movable unit for imaging. It would have been obvious to one having ordinary skill in the art at the time the invention was made to place light source, photodetector

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and light splitting and combining member within the objective unit, as suggested by Makigaki, to make the system more compact and therefore more portable.

Response to Arguments

8. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


LAF

January 7, 2005


MARK A. ROBINSON
PRIMARY EXAMINER